

## SDG Memo/Sample Summary

0044084

3244-Scu-  
057

Client Name: WESTINGHOUSE HANFORD CO. Date: 17 Sep 1992  
 Project Name: SITE WIDE IV Update No.: 0  
 SDG No.: 3244 Work Order No.: 32359-42  
 Project Manager: J. DEWALD  
 Mail Date:

Client Samp No.	S-Cubed Samp No.	Date Rcvd	Date Samp	Matrix	ANIONS	FURN7000	HG7000	ICP6010	NO2/NO3	S	TALK	TC	TOC
BOBJC1	3244-01	8-22-1992	7-30-1992	SOIL	X	X	X	X	X	X	X	X	X
BOBJC1MS	3244-01MS	8-22-1992	7-30-1992	SOIL	X	X	X	X	X	X	X	X	X
BOBJC1REP	3244-01REP	8-22-1992	7-30-1992	SOIL	X	X	X	X	X	X	X	X	X

(X) = Non-Billable Sample



## ***NARRATIVE***

September 18, 1992

**Narrative Project:** Site Wide IV  
**Reference No.:** 32359-42  
**Client:** WHC  
**SDG No.:** 3244

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### **METALS**

The samples were analyzed according to SW-846 Methods 6010 and the 7000 series for CLP metals and Mo.

The quality control results were generally acceptable. Several CCVs and CCB for Sb in the first run are outside criteria. Sb results should be considered estimated. The GFAA MS elements were not spiked due to laboratory error. A post-spike sample was analyzed for informational purposes and included on Form 5B in the comments section with very low recoveries (this raw data is included but not reported on forms). Low MS recoveries were also seen for several ICP analytes and Hg, thus indicating matrix effects possibly due to the extremely high concentration of Fe present in the sample. All soil LCS results are within advisory ranges.

### **ANIONS**

The samples were analyzed according to EPA Method 300.0 for NO<sub>2</sub> and NO<sub>3</sub>. For soil, 10 gm of sample was leached into 50 mL of DI Type II water prior to analysis. The quality control results were acceptable. The RPD of the replicate sample and the MS spike recoveries were within the control limits.

### **TOTAL ALKALINITY**

The samples were analyzed according to EPA Method 310.1 for total alkalinity. For soil, 10 gm of sample was leached into 50 mL of DI Type II water prior to analysis. The quality control results were acceptable. The RPD of the replicate sample and the MS spike recoveries were within the control limits.

## ***NARRATIVE***

### **SULFIDE**

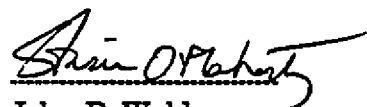
The samples were analyzed according to EPA Method 9030 for sulfide. For soil, 10 gm of sample was leached into 50 mL of DI Type II water prior to analysis. The quality control results were acceptable. The RPD of the replicate sample and the MS spike recoveries were within the control limits.

### **TOTAL ORGANIC CARBON**

The samples were analyzed according to EPA Method 9060 by combustion and then IR analysis. Prior to analysis, a sample aliquot was measured and phosphoric acid was added to the soil. The mixture was placed in an oven at 70°C for one hour, then removed, cooled, and ground to a fine powder texture. The sample then went through the combustion and IR analysis process. The quality control results were acceptable.

### **TOTAL CARBON**

The samples were analyzed according to EPA Method 9060 by combustion and then IR analysis. Prior to analysis, a sample aliquot was ground to a fine powder texture. The sample then went through the combustion and IR analysis process. The quality control results were acceptable.



John DeWald  
Project Manager

enclosures

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SAF # 92-193



**Westinghouse  
Hanford Company**

## SAMPLE ANALYSIS REQUEST

## PART I: FIELD SECTION

Collector Janette Knittel

Date Sampled 7-30-92 Time 1400 hours

Company Contact J. G. Lucas

Telephone (376)-2789 / Area code  
509

[illegible]

Field Information\*\* Background Site, -530 ft (depth)

Special Handling and/or Storage 4°C

Possible Sample Hazards None

## PART II: LABORATORY SECTION

Received by \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

**Analysis Required**

\*Indicate whether sample is soil, sludge, water, etc.

**\*\*Use back of page for additional information relative to sample location.**

**A-6000-406 (05/90)**

08/19/92 13:22 373 3178

222S 3B

450 HILLS LOBBY

002

53 Lot # 3244

SAMPLE STATUS REPORT FOR E 4542. E-BLANK B06JCI TIME: 8/19/92 14:12  
DISPATCHED: 8/19/92 10:30 SAMPLE HAS NOT BEEN SLURPED  
RECEIVED: 8/19/92 11: 8

EXT. DETER. RESULTS OR STATUS

\*\*\*\*\*

4271 TOT-ACT < 5.00000E 01 PICI/G

OUT OF GOOD CHARGE  
RANGE? ANS? CODE

\*\*\* \*\*

N Y YLBBI

END OF REPORT

Saturday Delivery / Signature Security

63 Lot # 3244

Contractor Westinghouse Hanford Co.	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W92-0-0577 #31
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PART I - TO BE COMPLETED BY ORIGINATOR

Department	Envir Rest. Eng.	Section	ERA	Unit	
The following items are to be shipped from		<input checked="" type="checkbox"/> Contractor	<input type="checkbox"/> Vendor		
Routing		Emergency	<input checked="" type="checkbox"/> Contractor	<input type="checkbox"/> Vendor	
Shipped to	S-Cubed 3398 Carmel Mt. Rd San Diego, CA 92121-1095		Off-site Custodian John Dewald	Full Title +	
Quantity	Description (Include Serial and any Government Tag Numbers)			Original Cost	
1 23 lbs.	Poly ice chest (RM #35) containing a glass sample container of soil packed in blue ice and vermiculite. Sample # B06JC1				

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Program not available onsite.

Bill of Lading # 250 987 005 5

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release S. J. Eberhart	RM Survey No 910686	Date 8-21-92
Location of Property (Area & Bldg.) Yak Rivercode Bldg. 48-96	Contact J. G. Lugo	Phone 276-2789
Date Ready for Shipment 8-21-92	Cost Code to be Charged PKIRB	Approximate Date This Property will be Returned
Originated By C. D. Kramic	Date 8/21/92	Authorized By [Signature]
Signature and Name of Property Control	Custodian Date	Property Management Approval [Signature]
		Date 8/21/92

PART II - TO BE COMPLETED BY SHIPPING

Signature of Recipient [Signature]	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date 8-21-92 1325				

DISTRIBUTION

By Originator White, Green, Yellow, Pink - Property Management Goldenrod - Retain	Shipping Operation - Sign all Copies and Forward to: White - Property Management Green - Property Control Custodian (Issuing Office) Yellow - Retain Pink - Originator
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VII

54-3000-479 (09/89)

5361#3244

Westinghouse Hanford  
Company

CHAIN OF CUSTODY

Custody Form Initiator JA Knittel  
 Company Contact J.C. Lucas Telephone 376-2789  
 Project Designation/Sampling Locations Yakima Barricade Breach Collection Date 7-30-92  
699-48-96, -530 ft. / Sitewide Background Project  
 Ice Chest No. RM #35 Field Logbook No. EFL-1023  
 Bill of Lading/Airbill No. 250987005 5 Offsite Property No. W92-0-04-8 <sup>0577 #31</sup>  
CK 8/21/92  
 Method of Shipment Emery  
 Shipped to S - Cubed  
 Possible Sample Hazards/Remarks None

Sample Identification

B06NCL - Soil (250ml/26)

☐ Field Transfer of Custody

CHAIN OF POSSESSION

(Sign and Print Names)

Relinquished by: <u>Jonette Knittel</u> <u>Jonette Knittel</u>	Received by: <u>Jonathan G. Lucas</u> <u>Jonathan G. Lucas</u>	Date/Time: <u>8-19-92</u> <u>0930</u>
Relinquished by: <u>Jonathan G. Lucas</u> <u>Jonathan G. Lucas</u>	Received by: <u>C. D. Kramer</u> <u>C. D. Kramer</u>	Date/Time: <u>8-21-92</u> <u>10:00 am</u>
Relinquished by: <u>C. D. Kramer</u> <u>C. D. Kramer</u>	Received by: <u>[Signature]</u>	Date/Time: <u>8/22/92</u> <u># 12:30 PM</u>
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:
Comments:		

VIII

FORM OF PAYMENT				SERVICES			
Check <input type="checkbox"/> G.O. <input type="checkbox"/> <span style="border: 1px solid black; padding: 2px;">20</span>				UNITED STATES / CANADA <input type="checkbox"/> Same Day <input type="checkbox"/> Express <input type="checkbox"/> Business Documents <input type="checkbox"/> <input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> Preferred <input type="checkbox"/> Customs Clearance <input type="checkbox"/> <input type="checkbox"/> Second Day <input checked="" type="checkbox"/> Saturday Delivery <input type="checkbox"/> Standard <input type="checkbox"/> Delivery <input type="checkbox"/>			
Shipper's Account Number <b>E 450281585</b>				Emery <b>WORLDWIDE</b> 			
From: WESTINGHOUSE SHIPPING DEPT (509) 376-6665 U.S. DEPARTMENT OF ENERGY C/O WESTINGHOUSE HANFORD BLDG 1163 2355 STEVENS DRIVE PITCHLAND WA				To: JOHN DEWALD S-CUBED 3398 CARMEL MT RD SAN DIEGO CA			
Customer's Reference Numbers W81225 PK1BB W92-0-0577#31				Consignee's Account Number <b>E 92121-1095</b>			
Description <b>1 ICE CHEST RM#35          SAMPLES OF SOIL          B06JC1</b>		Dimensions L W H 1 11 11		Total Pieces 1		Total Weight (in lbs) 23	
Remarks <b>SATURDAY DELIVERY          SIGNATURE SECURITY SERVICE</b>		Zip Ship <input type="checkbox"/>		Mark if Emery Packaging is used Urgent Letter <input type="checkbox"/> Urgent Pack <input checked="" type="checkbox"/>		FOR INFORMATION OR RATES CALL 1-800 44 EMERY (1-800-443-6379)	
Shipper's Signature <b>X</b>		Third Party Account Number <b>E</b>		Declared Value \$			
International Shipments Free Domestic <input type="checkbox"/>		Commodity Code		8/22/92 12:30 PM <b>E 509870055</b> 			
Base Charge		International Customs Value		International Insurance			
Total Transit and Charges		Other Charges/Purchase at Origin <input type="checkbox"/> OCAO		Terms and Conditions on Back			

H

**Date Received: 8-22-1992**

**Date Sampled: 7-30-1992**

**Client Code: WHC**

DC No. - -

**Time Received: 12:30**

**Data Due Date: 9-11-1992**

**Report Mail Date: 9-18-1992**

Received by (Signature):

**Custody Seals Present/Intact** ☒ Y **N Reporting Level:** FULL CLP

Airbill No. 230987055

**Chain of Custody Present/Intact ☒ N Turnaround Required: 30 DAY**

**Charge No. 32359-42**

**Client Forms Present** Y **N** **Quality Control Req'd'd: Level 3 (RCRA)**

[illegible]

## Water

## Container Types

**Soil = Soil/Sediment/Sludge**

**Water MS,MSD**

**Water = Aqueous**

Soil MS.MSD

**NAL = Non-Aqueous Liquid.**

SDG Complete Y N

**NSS = Non-Soil Solid**

Review JD 8/25

## U.S. EPA - CLP

1  
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

3244-01

Lab Name: S\_CUBED Contract: 32359-42

Lab Code: S3 Case No.: IV SAS No.: SDG No.: 3244

Matrix (soil/water): SOIL Lab Sample ID: 3244-01

Level (low/med): LOW Date Received: 08/22/92

% Solids: 95.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7080	-		P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	1.0	B		F
7440-39-3	Barium	97.9			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.63	U		P
7440-70-2	Calcium	3610	-		P
7440-47-3	Chromium	11.7			P
7440-48-4	Cobalt	6.3	B		P
7440-50-8	Copper	6.7			P
7439-89-6	Iron	19100	-		P
7439-92-1	Lead	4.1	-		F
7439-95-4	Magnesium	3050	-		P
7439-96-5	Manganese	299	-		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	11.5			P
7440-09-7	Potassium	503	B		P
7782-49-2	Selenium	0.63	U		F
7440-22-4	Silver	3.5			P
7440-23-5	Sodium	150	B		P
7439-98-7	Molybdenum	2.1	U		P
7440-62-2	Vanadium	39.0	-		P
7440-66-6	Zinc	77.9			P
7440-28-0	Thallium	0.63	U		F

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

B06JC1

FORM I - IN

7/88

002

LABORATORY:	S-CORPO	DATA REVIEWER:	MT
CLIENT:	WEC	PROJECT REVIEWER:	can 9/9
PROJECT:	SITE WDR IV	CHANGE #:	32439-42
LOT #:	3244	DATE SAMPLED:	07/30/92
FILE #:	AN32445	DATE RECEIVED:	08/22/92
DISK #:	AN70813	PREP DATE:	08/26/92
METHOD NO.:	300.0	DATE ANALYZED:	08/27/92
UNIT:	MG/KG	SAMPLE TYPE:	SOIL

LAB ID	F	CL	NO2	BR	NO3	PO4	SO4
3244 -01	0.298	1.39	<0.21	25.2	<0.52	<0.52	4.70
3244 -01B	0.287	1.47	<0.21	25.0	<0.52	<0.52	4.60
3244 -01S	2.61	3.81	2.43	37.6	12.7	12.6	15.6

All GC data were acceptable. 10 cm soil sample was leached into 50 mL DI type H<sub>2</sub>O prior to analysis. RPD of replicate sample and ms spike recovery were within the control limit.

S - CUBED

# Trace Inorganics Report

Client: WHC  
Project: SITE WIDE IV  
Sampling Date: 07-30-92

Analyst: EA  
Review: UN 918  
Receipt. Date: 08-22-92

Analyte: TALK

[illegible]

Method Detection Limit: 10.000 mg/L  
Preparation Method: 310.1  
Analytical Method: 310.1  
Preparation Date: 09-01-92  
Analysis Date: 09-01-92

UN = Units = (A=mg/kg B=ug/L C=mg/L) MT = Matrix = (S=Soil W=Wate.

Comments: Sample received after outside holding time. Customer requested to analyze even though it was outside holding time. 301 All analytical B.C. were acceptable. Sample was leached 10 gm into 30 mL DI water prior to analysis.

S - CUBED

# Trace Inorganics Report

Client: WHC  
Project: SITE WIDE IV  
Sampling Date: 07-30-92

Analyst: CB  
Review: can 9/10  
Receipt. Date: 08-22-92

Analyte: S

[illegible]

Method Detection Limit: 1.000 mg/L  
Preparation Method: 9030  
Analytical Method: 9030  
Preparation Date: 08-25-92  
Analysis Date: 08-25-92

UN = Units = (A=mg/kg B=ug/L C=mg/L) MT = Matrix = (S=Soil W=Water)

Comments: All GC data were acceptable. 10 gm of soil was leached into 50 mL DI type water prior to analysis 308

MAXWELL  
S-CUBED

ANALYTE:	TOC	CALIBRATION			QC SUMMARY			
METHOD REF.:	9060	STD 2000ppm	1979	M S	CONC	OBSERVED	%REC.	ACCEPT.
DATE:	9/9/92	STD 400ppm	402.4	L C S	200	203.9	102	80-120
ANALYST:	MM	STD 10ppm	10.05		2000	1981	99.1	80-120
MATRIX:	Soil	CAL BLANK	0.115					
		TOC CONC.=(TOC READING/2000)*(0.08mg/0.00001kg)*DIL.FACTOR						
		FINAL CONC.=TOC CONC./1-(%MOIST.*0.01)						

SAMPLE ID. (S3)	TOC READING	DIL. FACTOR	TOC CONC. (mg/kg)	%MOIS	FINAL CONC (mg/kg)	CLIENT SAMP.ID
EBS0909	3.4	1	3.4	0	3.4	
LCSS0909	1981	1	1981	0	1980	
3244-01	255.2	1	1021	4.23	1070	BO6JC1
3244-01REP	249.5	1	998	4.23	1040	BO6JC1
3260-1	54.6	1	218	24.83	290	BO6JCZ
3260-01REP	51.5	1	206	24.83	270	BO6JCZ

MAXWELL  
S-CUBED

			QC SUMMARY					
ANALYTE:	TC	CALIBRATION			CONC	OBSERVED	%REC.	ACCEPT.
METHOD REF.:	9060	STD 2000ppm	1979	M S	200	203.9	102	80-120
DATE:	9/9/92	STD 400ppm	402.4	L C S	2000	1981	99.1	80-120
ANALYST:	MM	STD 10ppm	10.05					
MATRIX:	Soil	CAL BLANK	0.115					
$\text{TOC CONC.} = (\text{TOC READING}/2000) * (0.08\text{mg}/0.00001\text{kg}) * \text{DIL.FACTOR}$ $\text{FINAL CONC.} = \text{TOC CONC.}/1 - (\% \text{MOIST.} * 0.01)$								

SAMPLE ID. (S3)	TC READING	DIL. FACTOR	TOC CONC. (mg/kg)	%MOIS	FINAL CONC (mg/kg)	CLIENT SAMP.ID
EBS0909	3.4	1	3.4	0	0	
LCSS0909	1981	1	1981	0	1980	
3244-01	340.2	1	1360.8	4.23	1420	BO6JC1
3244-01REP	334.2	1	1336.8	4.23	1400	BO6JC1
3260-01	172.9	1	691.6	24.83	920	BO6JCZ
3260-01REP	166.3	1	665.2	24.83	880	BO6JCZ

# S-CUBED TOC BLANK

CLIENT: WHC

PROJECT: SITE WIDE IV

DATE: 9/9/92

MATRIX: SOIL

Unit: mg/L or mg/kg

LCS REC.=(TOC OBS./TOC CONC.)\*100

	Analyte	Analyte
Preparation Blank	TOC	TOC
1	3.4	
2		
3		
Calibration Blank	.115	

	TOC CONC.	TOC OBS.	TOC REC.
LAB CONTROL SAMPLE 1	2000	1981	99.1
LAB CONTROL SAMPLE 2			

COMMENT:

# MAXWELL

S-CUBED Division

Lot No. 3244

## Sample Log-In Sheet

Revision No.: 0

Date Received: 8-22-1992

Date Sampled: 7-30-1992

Client Code: WHC

DC No. \_\_\_\_\_

Time Received: 12:30

Data Due Date: 9-11-1992

Report Mail Date: 9-18-1992

Received by (Sig): [Signature]

Custody Seals Present/Intact ☒ Y ☐ N Reporting Level: FULL CLP

Airbill No. 230987055

Chain of Custody Present/Intact ☒ Y ☐ N Turnaround Required: 30 DAY

Charge No. 32359-42

Client Forms Present

☒ Y ☐ N Quality Control Req'd: Level 3 (RCRA)

Case No./Project Code: SITE WIDE IV						SDG No.: 3244											All Info Agree	Notes
S-Cubed Sample No.	Sample Identification	Samp. Type	No. Cont.	Samp Stor.	Samp Cond	%M	ANIONS	FURN7000	HG7000	ICP6010	NO2/NO3	S	SPH	TALK	TC	TOC		
3244-01	B06JC1	SOIL	1	16	OK	X	X	X	X	X	X	X	X	X	X	X		
3244-01MS	B06JC1MS	SOIL	1	16	↓	X	X	X	X	X	X	X	X	X	X	X		
3244-01REP	B06JC1REP	SOIL	1	16	↓	X	X	X	X	X	X	X	X	X	X	X		

### Container Types

Water

\_\_\_\_\_

Soil

\_\_\_\_\_

\_\_\_\_\_

Soil = Soil/Sediment/Sludge

Water = Aqueous

NAL = Non-Aqueous Liquid

NSS = Non-Soil Solid

Water MS,MSD \_\_\_\_\_

Soil MS,MSD \_\_\_\_\_

SDG Complete ☒ Y ☐ N

Review JD 8/25